Abstracts

Accurate large-signal modeling of SiGe HBTs

F.X. Sinnesbichler and G.R. Olbrich. "Accurate large-signal modeling of SiGe HBTs." 2000 MTT-S International Microwave Symposium Digest 00.2 (2000 Vol. II [MWSYM]): 749-752.

Accurate large-signal modeling is a prerequisite for any effective nonlinear circuit design. We present a novel large signal model for SiGe HBTs that accurately describes the electrical and thermal behavior of the devices from DC to 40 GHz, covering the entire range of bias conditions. It combines the Gummel-Poon model with elements of the VBIC and the HICUM models as well as with specific extensions for SiGe HBTs. The model, which has been implemented into commercial circuit simulation programs, is validated by the excellent agreement of measured and simulated data of millimeter-wave oscillators.

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